

M-K FERGUSON  
WSSRAP LIBRARY  
FILE NO. HG-48

QUARTERLY REPORT

ST. CHARLES COUNTY WELL FIELD

MONITORING PROJECT

GRANT NO. DE-FG05-89OR21864

**SUPERSEDED**

Prepared by: Stanley Remington  
July, August and September, 1996

**MONTHLY REPORT**

**JULY 1996**

**BY**

**Stanley Remington**

**Consulting Hydrologist**

## **I. CHEMICAL ANALYSES**

The sampling of wells PW-9 and RMW-2 was completed on June 24, 1996. The results have been received and are appended. These were done in conjunction with the Department of Energy's quarterly sampling schedule. Some chemical parameters are sampled each quarter which I do not normally sample each month. The results were below the NPDES limits and within historical ranges.

The treated water from the quarry, batch NP-EPQ2-062796-C, was sampled on June 27, 1996 and the results have been received and are appended. Again no excessive quantities of any type of hazardous chemicals were noted. This again confirms the successful treatment of the quarry water before it is discharged into the Missouri River.

A report from the St. Louis County Environmental Health Laboratories for St. Charles County well water was received and is appended. This was for the County's raw water taken during the month of June 1996. The parameters measured were gross alpha and beta. Both readings show that the parameters were all within historical ranges, and both well below the NPDES limits.

The Quarterly Site and Quarry Water Treatment Plant Effluent Data Summary - Second Quarter 1996 was received from the Department of Energy and is appended for your information.

## II. REPORT

A 270 page report was received from the Department of Energy entitled "Weldon Spring Site Environmental Report for Calendar Year 1995." I have not yet had time to review the report, but will do so in the August 1996 report.

## III. CONFERENCE

I attended the 24th Annual Missouri Waste Management Conference in Columbia, Missouri on July 21 - 23, 1996. The main purpose of the Coalition is to provide a forum where industry, government and citizens can share information and opinions on current waste management issues. This conference provides a broad spectrum of meetings on different environmental issues. A participant can select which meetings to attend and receive information on the issues selected. I find the conference very useful for keeping up-to-date on many vital issues.

## IV. FUTURE PLANS

I will sample wells PW-3 and PW-4 at the end of July and wells PW-5 and PW-6 at the end of August. My monthly report for July 1996 is being submitted early because I will be gone from August 2 through August 20 to the state of New York.

## V. MISCELLANEOUS

The monthly St. Charles County Water Sales Report is appended for you information.

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

876 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

July 9, 1996

Stanley M. Remington  
956 Broadmoor Lane  
St. Charles, MO 63301

RE: ATAS #16089.01  
Weldon Spring

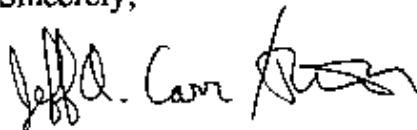
Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on June 27, 1996.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr  
Project Manager

Enclosures

JAC/dms

**ATAS**

"Professional Commitment"

CLIENT: STANLEY M. REMINGTON  
 919 BROADMOOR LANE  
 ST. CHARLES, MO 63301  
 ATTN: STANLEY M. REMINGTON

REPORT: 1608901EX(252)

DATE : 07-09-96

SAMPLE MATRIX : WATER  
 ATAS # : 16089.01  
 DATE SUBMITTED: 06-27-96  
 DATE EXTRACTED: 07-01-96  
 DATE ANALYZED : 07-03-96  
 METHOD REF. : SW846-8090, EPA METHODOLOGY  
 PROJECT : WELDON SPRING  
 SAMPLE ID : NP-EPQ2-062796-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6 DNT	0.0108	ND
2,4 DNT	0.0215	ND

## QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	84 %
TETRACHLORO-M-XYLENE(30-150)	98 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1608901EX(252)

DATE : 07-09-96

SAMPLE MATRIX : WATER  
ATAS # : METHOD BLANK  
DATE SUBMITTED: 06-27-96  
DATE EXTRACTED: 07-01-96  
DATE ANALYZED : 07-03-96  
METHOD REF. : SW846-8090, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6 DNT	0.010	ND
2,4 DNT	0.020	ND

## QA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	58 %
TETRACHLORO-M-XYLENE(30-150)	85 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1608901EX(252)

DATE : 07-09-96

SAMPLE MATRIX : WATER  
ATAS # : LABORATORY CONTROL SAMPLE  
DATE SUBMITTED: 06-27-96  
DATE EXTRACTED: 07-01-96  
DATE ANALYZED : 07-03-96  
METHOD REF. : SW846-8090, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : LABORATORY CONTROL SAMPLE

LCS  
% REC.

LCSD  
% REC.

RPD

2,6 DNT  
2,4 DNT

92  
90

84  
82

9  
9



CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1608901EX(252)

DATE : 07-09-96

SAMPLE MATRIX : WATER  
ATAS # : 16089.01  
DATE SUBMITTED: 06-27-96  
PROJECT : WELDON SPRING  
SAMPLE ID : NP-EPQ2-062796-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
-----------	--------------------	-------	---------	------------------	---------------------

## **INORGANICS**

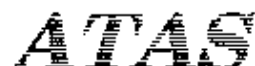
NITRATE	1.05	mg/L	ND	07-01-96	SM 418B
---------	------	------	----	----------	---------

## **METALS**

ARSENIC	0.010	mg/L	ND	07-03-96	SW 6010
CHROMIUM	0.010	mg/L	ND	07-03-96	SW 6010
COPPER	0.010	mg/L	ND	07-03-96	SW 6010
LEAD	0.005	mg/L	ND	07-03-96	SW 6010
MANGANESE	0.005	mg/L	0.015	07-03-96	SW 6010
MERCURY	0.0002	mg/L	ND	07-05-96	SW 7470
SELENIUM	0.005	mg/L	ND	07-03-96	SW 6010

mg/L = PARTS PER MILLION (PPM)

ND = NOT DETECTED ABOVE REPORTING LIMIT



875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1608901EX(252)

DATE : 07-09-96

QA/QC

DESCRIPTION		PARAMETER	RESULTS
METHOD BLANK	07-03-96	ARSENIC	<0.010 mg/L
METHOD BLANK	07-03-96	CHROMIUM	<0.010 mg/L
METHOD BLANK	07-03-96	COPPER	<0.010 mg/L
METHOD BLANK	07-03-96	LEAD	<0.005 mg/L
METHOD BLANK	07-03-96	MANGANESE	<0.005 mg/L
METHOD BLANK	07-05-96	MERCURY	<0.0002 mg/L
METHOD BLANK	07-03-96	SELENIUM	<0.005 mg/L
METHOD BLANK	07-01-96	NITRATE	<1.0 mg/L
CONTROL SPIKE	07-03-96	ARSENIC	91 % RECOVERY
CONTROL SPIKE	07-03-96	CHROMIUM	88 % RECOVERY
CONTROL SPIKE	07-03-96	COPPER	85 % RECOVERY
CONTROL SPIKE	07-03-96	LEAD	90 % RECOVERY
CONTROL SPIKE	07-03-96	MANGANESE	88 % RECOVERY
CONTROL SPIKE	07-05-96	MERCURY	107 % RECOVERY
CONTROL SPIKE	07-03-96	SELENIUM	89 % RECOVERY
CONTROL SPIKE	07-01-96	NITRATE	101 % RECOVERY

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1608901EX(252)

DATE : 07-09-96

SAMPLE MATRIX : WATER  
ATAS EPISODE : #16089  
DATE SUBMITTED: 06-27-96  
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-EPQ2-062796-C	16089.01	GROSS ALPHA	0 +/- 4
NP-EPQ2-062796-C	16089.01	GROSS BETA	2 +/- 7
NP-EPQ2-062796-C	16089.01	TOTAL URANIUM(mg/L)	<0.005
NP-EPQ2-062796-C	16089.01	RADIUM-226, TOTAL	0.4 +/- 0.2
NP-EPQ2-062796-C	16089.01	RADIUM-228, TOTAL	0.1 +/- 1.0
NP-EPQ2-062796-C	16089.01	THORIUM-228, TOTAL	0.0 +/- 0.1
NP-EPQ2-062796-C	16089.01	THORIUM-230, TOTAL	0.4 +/- 0.2
NP-EPQ2-062796-C	16089.01	THORIUM-232, TOTAL	0.0 +/- 0.1

\* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%  
CONFIDENCE LEVEL, 1.96σ.

pCi/L= PICOCURIES PER LITER

/L = PARTS PER MILLION (PPM)

WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSPR)  
7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304  
TELEPHONE (314) 441-8086 TELEX (314) 447-0803

ISSN 0013-788X Rev. de Sociologia 11 (2003)

Sampler's Signature

... .. Technical Reviewer

Relinquished By	Received By	Date	Time	Reason for Transfer	Seal Intact? Y/N	Cooler Temp
Jon Walton	<i>[Signature]</i>	6/27/96	1255			
<i>[Signature]</i>	<i>[Signature]</i>	6/27/96	1:50	23°C		

## AK-17 Procurement

2015

15251

**DATE**

Site Shipping Officer

Dzień

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

July 15, 1996

Stanley M. Remington  
956 Broadmoor Lane  
St. Charles, MO 63301

RE: ATAS #16038.01-#16038.02  
Weldon Spring

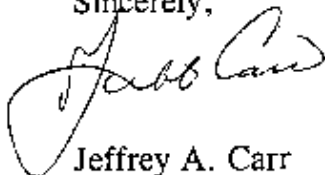
Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on June 24, 1996.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr  
Project Manager

Enclosures

JAC/sdp

**ATAS**

"Professional Commitment"

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS # : 16038.01  
DATE SUBMITTED: 06-24-96  
PROJECT : WELDON SPRING  
SAMPLE ID : RMW-2

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
-----------	--------------------	-------	---------	------------------	---------------------

## INORGANICS

NITRATE	1.05	mg/L	ND	06-24-96	SM 418 B
---------	------	------	----	----------	----------

## TCLP TOXICITY METALS

ARSENIC	0.010	mg/L	0.066	07-01-96	SW 6010
BERYLLIUM	0.003	mg/L	ND	06-28-96	SW 6010
COPPER	0.010	mg/L	ND	06-28-96	SW 6010
IRON	0.050	mg/L	8.32	06-28-96	SW 6010
LEAD	0.005	mg/L	ND	07-01-96	SW 6010
MAGANESE	0.005	mg/L	1.00	06-28-96	SW 6010
ZINC	0.020	mg/L	0.035	06-28-96	SW 6010
MERCURY	0.0002	mg/L	ND	06-26-96	SW 7470

mg/L = PARTS PER MILLION (PPM)

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS # : 16038.02  
DATE SUBMITTED: 06-24-96  
PROJECT : WELDON SPRING  
SAMPLE ID : PW-9

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
-----------	--------------------	-------	---------	------------------	---------------------

## **INORGANICS**

NITRATE	1.0	mg/L	ND	06-24-96	SM 418B
---------	-----	------	----	----------	---------

## **TCLP TOXICITY METALS**

ARSENIC	0.010	mg/L	ND	07-01-96	SW 6010
BERYLLIUM	0.003	mg/L	ND	06-28-96	SW 6010
COPPER	0.010	mg/L	ND	06-28-96	SW 6010
IRON	0.050	mg/L	5.74	06-28-96	SW 6010
LEAD	0.005	mg/L	0.006	07-01-96	SW 6010
MAGANESE	0.005	mg/L	0.366	06-28-96	SW 6010
ZINC	0.020	mg/L	ND	06-28-96	SW 6010
MERCURY	0.0002	mg/L	ND	06-26-96	SW 7470

mg/L = PARTS PER MILLION (PPM)

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

## **QA/QC**

DESCRIPTION		PARAMETER	RESULTS
METHOD BLANK	07-01-96	ARSENIC	<0.010 mg/L
METHOD BLANK	06-28-96	BERYLLIUM	<0.002 mg/L
METHOD BLANK	06-28-96	COPPER	<0.010 mg/L
METHOD BLANK	06-28-96	IRON	<0.050 mg/L
METHOD BLANK	07-01-96	LEAD	<0.005 mg/L
METHOD BLANK	06-28-96	MAGANESE	<0.005 mg/L
METHOD BLANK	06-28-96	ZINC	<0.020 mg/L
METHOD BLANK	06-26-96	MERCURY	<0.0002 mg/L
METHOD BLANK	06-24-96	NITRATE	<1.00 mg/L
CONTROL SPIKE	07-01-96	ARSENIC	102 % RECOVERY
CONTROL SPIKE	06-28-96	BERYLLIUM	87 % RECOVERY
CONTROL SPIKE	06-28-96	COPPER	89 % RECOVERY
CONTROL SPIKE	06-28-96	IRON	89 % RECOVERY
CONTROL SPIKE	07-01-96	LEAD	100 % RECOVERY
CONTROL SPIKE	06-28-96	MAGANESE	88 % RECOVERY
CONTROL SPIKE	06-28-96	ZINC	88 % RECOVERY
CONTROL SPIKE	06-26-96	MERCURY	93 % RECOVERY
CONTROL SPIKE	06-24-96	NITRATE	101 % RECOVERY



# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS EPISODE : #16038  
DATE SUBMITTED: 06-24-96  
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
RMW-2	16038.01	GROSS ALPHA	4 +/- 7*
RMW-2	16038.01	GROSS BETA	7 +/- 9*
RMW-2	16038.01	TOTAL URANIUM (mg/L)	0.008
PW-9	16038.02	GROSS ALPHA	1 +/- 5*
PW-9	16038.02	GROSS BETA	7 +/- 8*
PW-9	16038.02	TOTAL URANIUM (mg/L)	<0.005

VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%  
CONFIDENCE LEVEL, 1.96σ.

pCi/L = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS # : 16038.01  
DATE SUBMITTED: 06-24-96  
DATE EXTRACTED: 06-27-96  
DATE ANALYZED : 06-28-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : RMW-2

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS # : 16038.02  
DATE SUBMITTED: 06-24-96  
DATE EXTRACTED: 06-27-96  
DATE ANALYZED : 06-28-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : PW-9

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS # : METHOD BLANK  
DATE SUBMITTED: 06-24-96  
DATE EXTRACTED: 06-27-96  
DATE ANALYZED : 06-27-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION</u> <u>LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

- NOT DETECTED ABOVE QUANTITATION LIMIT

# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1603801EX(253)

DATE : 07-15-96

SAMPLE MATRIX : WATER  
ATAS # : LABORATORY CONTROL SAMPLE  
DATE SUBMITTED: 06-24-96  
DATE EXTRACTED: 06-27-96  
DATE ANALYZED : 06-27-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
----------	---------------------

HMX	95 %
RDX	102 %
3,5-TNB	117 %
ETRYL	76 %
1,3-DNB	107 %
NT	97 %
NITROBENZENE	117 %
2,6 DNT	110 %
2,4 DNT	101 %
-NITROTOLUENE	107 %
-NITROTOLUENE	112 %
m-NITROTOLUENE	115 %

874 Epp Epp Road • Maryland Heights, MO 63043-3211 • Office (314) 431-4570 • FAX (314) 434-0000

### CHAIN OF CUSTODY RECORD

[illegible]

SEND RESULTS TO (Name & Company):



Department of Energy

Oak Ridge Operations  
Weldon Spring Site  
Remedial Action Project Office  
7295 Highway 94 South  
St. Charles, Missouri 63304

July 11, 1996

Distribution:

**QUARTERLY SITE AND QUARRY WATER TREATMENT PLANT EFFLUENT DATA  
SUMMARY - SECOND QUARTER 1996**

Enclosed please find the subject effluent data summary sheets for the batches of water treated and discharged during the second quarter of 1996. Five batches (S#078 through S#082) and two batches (Q#044 through Q#45) have been treated and discharged from the site and quarry water treatment plants, respectively.

If you have any questions, please call me or Bruce Ballew at (314)441-8978.

Sincerely,

A handwritten signature in cursive script, reading "Jerry S. Van Fossen", is positioned above the typed name.

Jerry S. Van Fossen  
Deputy Project Manager  
Weldon Spring Site  
Remedial Action Project

Enclosure:  
As stated

cc w/o enclosure:  
Martha Windsor, MDNR

**Distribution List**

Larry Erickson  
Division of Environmental Quality  
Missouri Department of Natural Resources  
Post Office Box 176  
Jefferson City, Missouri 65102

Dan Wall  
Remedial Project Manager  
U.S. Environmental Protection Agency  
Region VII  
726 Minnesota Avenue  
Kansas City, Kansas 66101

Stanley Remington  
Consulting Hydrologist  
919 Broadmoor Lane  
St. Charles, Missouri 63301

Wayne Black  
St. Louis County Health Department  
111 South Meremac  
2nd Floor  
Clayton, Missouri 63105

Conn Roden  
St. Louis County Health Department  
111 South Meremac  
2nd Floor  
Clayton, Missouri 63105

Terry Gloriod  
Vice President for Production  
St. Louis County Water Department  
535 North New Ballas  
St. Louis, Missouri 63141

Dave Visintainer  
City of St. Louis Water Division  
Chain of Rocks Plant  
10450 Riverview Drive  
St. Louis, Missouri 63137



# SUMMARY OF QWTP (BATCH 044) ANALYTICAL RESULTS

FROM ALL AGENCIES RECEIVING SAMPLES ON 4/15/96

4/24/96 1030

PARAMETER	NPDES LIMITS (mg/l)	PMC DATA RESULTS	MOENR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<10.0 mg/l		NA	NA	NA
TSS	50 / 30	1.50 mg/l		NA	NA	NA
ARSENIC	0.1	<0.0355 mg/l		NA	NA	NA
CHROMIUM	0.1	<0.0063 mg/l		NA	NA	NA
COPPER ***	1	<0.0042 mg/l		NA	NA	NA
LEAD	0.1	<0.0437 mg/l		NA	NA	NA
MANGANESE	0.1	0.0123 mg/l		NA	NA	NA
MERCURY	0.004	<0.00010 mg/l		NA	NA	NA
SELENIUM	0.02	<0.005 mg/l		NA	NA	NA
CYANIDE, AMENABLE	0.0075	<0.00147 mg/l		NA	NA	NA
2,4-DNT	0.22 ug/l	<0.0166 ug/l		NA	NA	NA
FLUORIDE	4.0	<0.500 mg/l		NA	NA	NA
NITRATE+NITRITE AS N	*	<0.007 mg/l		NA	NA	NA
SULFATE	500	214 mg/l		NA	NA	NA
CHLORIDE	*	232 mg/l		NA	NA	NA
GROSS ALPHA	*	2.05 ± 0.904 pCi/l		NA	NA	2.7 ± 1.1 pCi/l
GROSS BETA	**	5.39 ± 0.986 pCi/l		NA	NA	8.3 ± 1.1 pCi/l
URANIUM, TOTAL	*	1.44 ± 0.0438 pCi/l		NA	NA	NA
RADIUM-226 ***	*	Due 5/1/96		NA	NA	NA
RADIUM-228 ***	*	Due 5/1/96		NA	NA	NA
THORIUM-230 ***	*	Due 5/1/96		NA	NA	NA
THORIUM-232 ***	*	Due 5/1/96		NA	NA	NA
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA	NA	NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs	*	<0.1 ug/l		NA	NA	NA
4. PESTICIDES	*	NA		NA	NA	NA
5. METALS / OTHERS	*	NA		NA	NA	NA
pH	6.0 - 9.0 S.U.	6.26	NA	NA	NA	NA

\* = MONITORING ONLY, NO PERMIT DISCHARGE LIMITS

\*\* = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l

\*\*\* = Parameter required once/month. Sampled this batch. Ac-227 was also sampled -- results due 5/1/96.

NA = Not analyzed.

= Data received after batch was discharged

FROM ALL AGENCIES RECEIVING SAMPLES ON 5/6/96

05/01/15

N/A - Not analyzed.

Data received after batch was discharged

From all parties receiving samples on 4/9/96

04/19/96 1410

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MOENR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<10.0 mg/l		NA	NA	NA
TSS	50 / 30	5.00 mg/l		NA	NA	NA
ARSENIC	0.1	<0.035mg/l		NA	NA	NA
CHROMIUM	0.1	<0.0063 mg/l		NA	NA	NA
LEAD	0.1	<0.0437 mg/l		NA	NA	NA
MANGANESE	0.1	0.0031 mg/l		NA	NA	NA
MERCURY	0.004	<0.00010 mg/l		NA	NA	NA
SELENIUM	0.02	<0.005 mg/l		NA	NA	NA
CYANIDE, AMENABLE	0.0075	<0.00147 mg/l		NA	NA	NA
2,4-DNT	0.22 ug/l	<0.0166 ug/l		NA	NA	NA
FLUORIDE	4.0	3.93 mg/l		NA	NA	NA
NITRATE + NITRITE AS N	20	0.720 mg/l		NA	NA	NA
SULFATE	500	220 mg/l		NA	NA	NA
CHLORIDE	*	248 mg/l		NA	NA	2.9 ± 1.3 pCi/l
GROSS ALPHA	*	1.50 ± 1.23 pCi/l		NA	NA	10.4 ± 1.1 pCi/l
GROSS BETA	*	4.90 ± 1.51 pCi/l		NA	NA	NA
URANIUM, TOTAL	**	0.589 ± 0.0189 pCi/l		NA	NA	NA
RADIUM - 226 ***	*	NA pCi/l		NA	NA	NA
RADIUM - 228 ***	*	NA pCi/l		NA	NA	NA
THORIUM - 230 ***	*	NA pCi/l		NA	NA	NA
THORIUM - 232 ***	*	NA pCi/l		NA	NA	NA
pH (Std. Units)	6 - 9	7.37		NA	NA	NA
PRIORITY POLLUTANTS (SEE BELOW)	*	NA		NA	NA	NA
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<0.10 ug/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA		NA	NA	NA

\* = Monitoring Parameter  
 \*\* = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l  
 \*\*\* = Monitoring parameter once per month. Sampled in batch S077.  
 \*\*\*\* = Effective limit of 1 µg/l

NA = NOT ANALYZED  
 = Data received after batch was discharged

NA = NOT ANALYZED

== Data received after batch was discharged

— Data received after batch was discharged

# SUMMARY OF SWTP (BATCH 080) ANALYTICAL RESULTS

From all parties receiving samples on 5/9/96

05/15/96 1310

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MODNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 60	<5.00 mg/l		NA	NA	NA
TSS	50 / 30	2.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.002 mg/l		NA	NA	
CHROMIUM	0.1	<0.0041 mg/l		NA	NA	
LEAD	0.1	<0.0060 mg/l		NA	NA	
MANGANESE	0.1	0.0044 mg/l		NA	NA	
MERCURY	0.004	<0.00010 mg/l		NA	NA	
SELENIUM	0.02	<0.0015 mg/l		NA	NA	NA
BARIUM****	Monitor	0.0217 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.01 ug/l		NA	NA	
FLUORIDE	4.0	2.20 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	0.81 mg/l		NA	NA	
SULFATE	500	241 mg/l		NA	NA	
CHLORIDE	*	174 mg/l		NA	NA	Due
GROSS ALPHA	*	<4.12 pCi/l		NA	NA	Due
GROSS BETA	*	8.72 ± 2.37 pCi/l		NA	NA	Due
URANIUM, TOTAL	**	1.76 ± 0.220 pCi/l		NA	NA	
RADIUM-226 ***	*	***		NA	NA	
RADIUM-228 ***	*	***		NA	NA	NA
THORIUM-230 ***	*	***		NA	NA	NA
THORIUM-232 ***	*	***		NA	NA	
pH (Std. Units)	6-9	7.20		NA	NA	
PRIORITY POLLUTANTS	(SEE BELOW)			NA	NA	NA
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	****	<1.0 ug/l / NA		NA	NA	NA
3. PCBs/PESTICIDES	*	NA		NA	NA	
4. METALS/OTHERS	*	NA		NA	NA	

\* = Monitoring Parameter

\*\* = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l

\*\*\* = Monitoring parameter once per month. Collected during batch S079 on 4/30/96.

\*\*\*\* = Effective limit of 1 µg/l

\*\*\*\*\* Limit on previous permit was 1.5 mg/l.

NA = NOT ANALYZED

= Data received after batch was discharged

## From all parties receiving samples on 5/28/96

**= Data received after batch was discharged**

# SUMMARY OF SWTP (BATCH 082) ANALYTICAL RESULTS

From all parties receiving samples on 6/17/96

06/26/96 0800

PARAMETER	NPDES LIMITS (mg/l) Unless noted	PMC DATA RESULTS	MoDNR DATA RESULTS	EPA DATA RESULTS	ST. CHARLES COUNTY DATA RESULTS	ST. LOUIS COUNTY H & W DATA RESULTS
COD	90 / 80	5.0 mg/l		NA	NA	NA
TSS	50 / 30	2.0 mg/l		NA	NA	NA
ARSENIC	0.1	<0.002 mg/l		NA	NA	
CHROMIUM	0.1	<0.0041 mg/l		NA	NA	
LEAD	0.1	<0.0006 mg/l		NA	NA	
MANGANESE	0.1	0.013 mg/l		NA	NA	
MERCURY	0.004	<0.00010 mg/l		NA	NA	
SELENIUM	0.02	<0.0015 mg/l		NA	NA	
CYANIDE, AMENABLE	0.0075	<0.005 mg/l		NA	NA	
2,4-DNT	0.22 ug/l	<0.01 ug/l		NA	NA	
FLUORIDE	4.0	1.63 mg/l		NA	NA	
NITRATE + NITRITE AS N	20	0.99 mg/l		NA	NA	
SULFATE	500	330 mg/l		NA	NA	
CHLORIDE	*	174 mg/l		NA	NA	
GROSS ALPHA	*	3.84 ± 1.06 pCi/l		NA	NA	4.7 ± 1.5 pCi/l
GROSS BETA	*	8.46 ± 1.02 pCi/l		NA	NA	9.7 ± 1.1 pCi/l
URANIUM, TOTAL	**	2.05 ± 0.250 pCi/l		NA	NA	2.2 ± 0.3 pCi/l
RADIUM-226 ***	*	NA		NA	NA	
RADIUM-228 ***	*	NA		NA	NA	NA
THORIUM-230 ***	*	NA		NA	NA	NA
THORIUM-232 ***	*	NA		NA	NA	
pH (Std. Units)	6 - 9	6.2		NA	NA	
PRIORITY POLLUTANTS (SEE BELOW)						
1. SEMI-VOA	*	NA		NA	NA	NA
2. VOA	*	NA		NA	NA	NA
3. PCBs/PESTICIDES	****/*	<1.0 µg/l / NA		NA	NA	NA
4. METALS/OTHERS	*	NA				

\* = Monitoring Parameter

\*\* = Design Value of 30 pCi/l; Not to Exceed 100 pCi/l

\*\*\* = Monitoring parameter once per month. Collected for June in batch S081.

\*\*\*\* = Effective limit of 1 µg/l

NA = NOT ANALYZED

= Data received after batch was discharged



SAMPLE ANALYSIS REQUEST

Date Received

7/3/96 ✓

ATTENTION:

St. Louis County Department of Health  
Environmental Health Laboratories

SAMPLE NUMBER

PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED:

6/01/96 - 6/30/96

COLLECTED BY:

Shift  
First Shift Operator

ADDRESS:

1635 South HWY 94

Defiance, MO

Zip Code 63341

TELEPHONE NO.:

( 314 ) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

R A W

X

GROSS ALPHA

X

GROSS BETA

RA-226

RA-228

OTHER (Identify)

50296-7

FOR LABORATORY USE ONLY

RESULTS (pCi/L)

\*MDL (pCi/L)

Gross Alpha

2.0 ± 1.2

1.0

Gross Beta

6.1 ± 0.6

1.0

Radium 226

0.1

Radium 228

1.0

Other

(Identify)

Procedure used:

Measurement of Radioactivity in Drinking Water  
EPA-600/4-80-032

COMMENTS: \* MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY:

ST. LOUIS COUNTY DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, MO 63105  
(314) 854-6324



**SAMPLE ANALYSIS REQUEST**

Date Received 7/3/96

ATTENTION:

St. Louis County Department of Health  
Environmental Health Laboratories

SAMPLE NUMBER

PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED:

6/01/96 - 6/30/96

COLLECTED BY:

SMJE  
First Shift Operator

ADDRESS:

1635 South HWY 94

Defiance, MO Zip Code 63341

TELEPHONE NO.:

( 314 ) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

**F I N I S H E D**

X GROSS ALPHA X GROSS BETA RA-226 RA-228

OTHER (Identify)

SCF96-7

**FOR LABORATORY USE ONLY**

**RESULTS (pCi/L)**

**\*MDL (pCi/L)**

Gross Alpha < 1.0

1.0

Gross Beta 4.2 ± 0.6

1.0

Radium 226

0.1

Radium 228

1.0

Other  
(Identify)

Procedure used: Measurement of Radioactivity in Drinking Water  
EPA-600/4-80-032

COMMENTS: \* MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY:

ST. LOUIS COUNTY DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, MO 63105  
(314) 854-6324

RECEIVED: 6/11/96 *y* Results & Invoice = 6/24/96 *y*

SAMPLE ANALYSIS REQUEST

ATTENTION: Environmental Health Laboratories  
St. Louis County Health Department

SAMPLE NUMBER PWSD I.D. #6079507 - St. Charles County Water

DATE COLLECTED: 5-01-5-31-96

COLLECTED BY: First Shift Operator

ADDRESS 1635 South HWY 94

Defiance, MO (Zip Code) 63341

TELEPHONE # (314) 926-922

ANALYSIS REQUESTED:

X GROSS ALPHA X GROSS BETA        RADIUM 226        RADIUM 228

       Other (Identify)

RAW

FOR LABORATORY USE ONLY

SCR96-6

<u>RESULTS (pCi/L)</u>	<u>*MDL (pCi/L)</u>
Gross Alpha <u>2.4 ± 1.2</u>	<u>1.0</u>
Gross Beta <u>5.2 ± 1.0</u>	<u>1.0</u>
Radium 226 <u>      </u>	<u>0.1</u>
Radium 228 <u>      </u>	<u>1.0</u>
Other- Identify <u>      </u>	<u>      </u>

6/24/96 JH RA

Procedure used: Measurement of Radioactivity in Drinking Water EPA-600/4-80-032

COMMENTS: \*MDL is the minimum detectable limit.

Analysis performed by: ST. LOUIS COUNTY HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th Floor  
Clayton, Missouri 63105

CC sent to: T.A. Aaron

RECEIVED: 6/11/96

Results & Invoice - 6/24/96

SAMPLE ANALYSIS REQUEST

ATTENTION: Environmental Health Laboratories  
St. Louis County Health Department

SAMPLE NUMBER PWSD I.D. #6079507 - St. Charles County Water

DATE COLLECTED: 5-01-5-31-96

COLLECTED BY: First Shift Operator

ADDRESS 1635 South HWY 94

Defiance, MO (Zip Code) 63341

TELEPHONE # (314) 926-922

ANALYSIS REQUESTED:

☒ GROSS ALPHA ☒ GROSS BETA ☐ RADIUM 226 ☐ RADIUM 228

☐ Other (Identify)

Finished

FOR LABORATORY USE ONLY

SCI96-6

	<u>RESULTS (pCi/L)</u>	<u>*MDL (pCi/L)</u>
Gross Alpha	<u>&lt;1.0</u>	<u>1.0</u>
Gross Beta	<u>4.2 ± 0.5</u>	<u>1.0</u>
Radium 226	<u></u>	<u>0.1</u>
Radium 228	<u></u>	<u>1.0</u>
Other- Identify	<u></u>	<u></u>

6/24/96 JH  
*[Signature]*

Procedure used: Measurement of Radioactivity in Drinking Water EPA-600/4-80-032

COMMENTS: \*MDL is the minimum detectable limit.

Analysis performed by: ST. LOUIS COUNTY HEALTH DEPARTMENT  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, Missouri 63105

cc sent to: T. W. Aaron

# ST. CHARLES COUNTY MONTHLY WATER SALES REPORT

DATE OF REPORT 07/01/96

MONTH OF REPORT JUN96

WATER PRODUCTION	377,838,000
WASHWATER USED	6,699,000
DELIVERED TO SYSTEM	371,139,000

## MO. AMERICAN WATER

	BOOSTER STATION	276,021,000
67004132835-007	FRANCIS HOWELL	40,000
67004132850-007	MO. HWYS & TRANS.	3,100
67004133000-004	M.K. FERGUSEN	817,000
67004133040-015	M.K. FERGUSEN	570,000
67004133010-002	M.K. FERGUSEN	117,000
67004133020-000	M.K. FERGUSEN	31,000
67004132855-002	FRANCIS HOWELL	588,000
67004132890-009	M.K. FERGUSEN	68,000
67095018237-000	M.K. FERGUSEN	124,000
	TOTAL	278,379,100

## WATER DISTICT #2

24" EAST LINE	0
24" WEST LINE	80,243,000
BYPASS	0
TOTAL	80,243,000

## WATER DISTICT #2

NEW MELLE	TOTAL	8,575,000
-----------	-------	-----------

## NATIONAL GUARD AREA

BLGD S-61	5,000
WASH RACK	2,000
TOTAL	7,000

TOTAL WATER SALES \*\*\*\*\* 367,204,100

## ST. CHARLES COUNTY WATER DEPARTMENT

JUNE 96

## INVENTORY OF CHEMICALS

PREVIOUS BALANCE

LIME  
179523CHLORIN  
12085

RECIEVED

INV. # DATE

201877.6/4	49660
202268.6/6	49440
202746.6/11	48860
6/13	48720
203818.6/18	48740
204237.6/20	49500
204874.6/25	49640
204874.6/27	49700

INV. # DATE

6/14	8000
6/28	8000

*****	394260
TOTAL AMOUNT	573783

*****	16000
	28085

USED	365729
------	--------

20100

BALANCE	208054
---------	--------

7895

#/1000 GALLON	1.00
---------------	------

0.0595

PARTS/MILLION	129
---------------	-----

5.95

AVG. #/DAY	12858
------------	-------

670

# USED Y TO D 2334508.

97961

**MONTHLY REPORT**

**AUGUST 1996**

**BY**

**Stanley Remington**

**Consulting Hydrologist**

## I. CHEMICAL ANALYSES

The results from sampling wells PW-3 and PW-4 have been received and are appended. These wells were sampled on July 26, 1996. No detections were noticed for the nitroaromatics (listed as "Explosives") and normal quantities of total uranium, gross alpha and beta were noted. That is, all of the results are well within NPDES limits and are in line with historical values.

Wells PW-5 and PW-6 were sampled on August 22, 1996. These results have not yet been received.

## II. REPORTS

Three reports have been received by me from the Department of Energy. The first was received during July 1996 and was entitled "Weldon Spring Site Environmental Report for the Calendar Year 1995". The objective of the report was to characterize trends and environmental conditions at the site and to confirm compliance with environmental and health protection standards and requirements. The report also presents the status of remedial activities and the results of monitoring these activities to assess their impact on the public and the environment. The Monitoring Summary stated, "Environmental monitoring data showed that dose estimates were below the US Department of Energy guideline of 100 mrem (1 mSv) annual total effective dose equivalent for all exposure pathways. NESHAP's (National Emission Standards for Hazardous Air Pollutants) air monitoring results for radioactive air particulates showed that dose estimates were

all well below the NESHAP standard of 10 mrem (0.1 mSv) per year. In addition several other characterizations were monitored including surface and groundwater. The important thing was that no hazardous materials have yet to reach the St. Charles County Well Field. Based on the past several years it is doubtful if any ever will, but monitoring for these in the future will be necessary.

A second report entitled "Engineering Evaluation/Cost Analysis for the Proposed Removal Action at the Southeast Drainage Near the Weldon Spring Site, Weldon Spring, Missouri" was prepared to support a proposed removal of contaminated sediment from selected portions of the Southeast Drainage as part of the cleanup activities being conducted by the US Department of Energy at the Weldon Spring Site in St. Charles County, Missouri. Comments were encouraged by any or all of the recipients of the report. The southeast drainage is a natural 2.4 km. (1.5 mi.) channel that carries surface runoff to the Missouri River from the southern portion of the chemical plant area and a small portion of the ordinance works area (part of the Weldon Spring Training Area) south of the groundwater divide. The drainage becomes contaminated as a result of past activities of the US Army and the DOE (and its predecessors). Several different calculation types were performed including risk, sediment, surface water, exposure and something called risk characterization. The entire report is high technical and is available for analysis from St. Charles County, the County Library or me for anyone interested in the technical points analyzed.



A third report entitled "Quarterly Environmental Data Summary for the Second Quarter 1996" was received. There were several above normal readings noted primarily in sources near the quarry and raffinate pit areas and one sample from the Site Water Treatment Plant. This latter site was retested and showed a normal value for the metals detected, that is, fluoride, selenium and silver. They are below baseline. Still no above averages were noted in any of the County's pumping wells. High readings were almost always due to laboratory errors. Whenever subsequent tests were made they have always returned to their historical values.

### III. FUTURE PLANS

I will sample the quarterly batches from wells in September with the DOE and maybe the Missouri Department of Natural Resources. This will be done in mid-September.

### IV. MISCELLANEOUS

Appended are the test results for raw and treated water taken from the Water Plant between July 1 and 31, 1996. Also appended is the St. Charles County Monthly Water Sales Report.

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

August 15, 1996

Stanley M. Remington  
956 Broadmoor Lane  
St. Charles, MO 63301

RE: ATAS #16349.01-#16349.02  
Weldon Spring

Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on July 26, 1996.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr  
Project Manager

Enclosures

JAC/sdp

**ATAS**

"Professional Commitment"

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1634901EX(256)

DATE : 08-15-96

SAMPLE MATRIX : WATER  
ATAS # : 16349.01  
DATE SUBMITTED: 07-26-96  
DATE EXTRACTED: 07-31-96  
DATE ANALYZED : 08-04-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : PW-3

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION</u> <u>LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON  
 956 BROADMOOR LANE  
 ST. CHARLES, MO 63301  
 ATTN: STANLEY M. REMINGTON

REPORT: 1634901EX(256)

DATE : 08-15-96

SAMPLE MATRIX : WATER  
 ATAS # : 16349.02  
 DATE SUBMITTED: 07-26-96  
 DATE EXTRACTED: 07-31-96  
 DATE ANALYZED : 08-04-96  
 METHOD REF. : SW846-8330, EPA METHODOLOGY  
 PROJECT : WELDON SPRING  
 SAMPLE ID : PW-4

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION</u> <u>LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1634901EX(256)

DATE : 08-15-96

SAMPLE MATRIX : WATER  
ATAS # : METHOD BLANK  
DATE SUBMITTED: 07-26-96  
DATE EXTRACTED: 07-31-96  
DATE ANALYZED : 08-04-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION</u> <u>LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

END- NOT DETECTED ABOVE QUANTITATION LIMIT

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1634901EX(256)

DATE : 08-15-96

SAMPLE MATRIX : WATER  
ATAS # : LABORATORY CONTROL SAMPLE  
DATE SUBMITTED: 07-26-96  
DATE EXTRACTED: 07-31-96  
DATE ANALYZED : 08-04-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
----------	---------------------

HMX	107 %
RDX	114 %
3,5-TNB	113 %
ETRYL	102 %
1,3-DNB	118 %
TNT	107 %
NITROBENZENE	125 %
2,6 DNT	111 %
2,4 DNT	103 %
o-NITROTOLUENE	116 %
p-NITROTOLUENE	116 %
m-NITROTOLUENE	116 %

CLIENT: STANLEY M. REMINGTON  
956 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1634901EX(256)

DATE : 08-15-96

SAMPLE MATRIX : WATER  
ATAS EPISODE : #16349  
DATE SUBMITTED: 07-26-96  
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-3	16349.01	GROSS ALPHA	3 +/- 2*
PW-3	16349.01	GROSS BETA	8 +/- 5*
PW-3	16349.01	TOTAL URANIUM (mg/L)	<0.005
PW-4	16349.02	GROSS ALPHA	2 +/- 2*
PW-4	16349.02	GROSS BETA	6 +/- 4*
PW-4	16349.02	TOTAL URANIUM (mg/L)	<0.005

\* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%  
CONFIDENCE LEVEL, 1.96σ.

pCi/L= PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)





Results  
8-19-96

**SAMPLE ANALYSIS REQUEST**

Date Received 08-06-96

ATTENTION: St. Louis County Department of Health  
Environmental Health Laboratories

SAMPLE NUMBER PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 07-01 - 07-31-96

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94  
Defiance, MO Zip Code 63341

TELEPHONE NO.: ( 314 ) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: RAW

X GROSS ALPHA X GROSS BETA RA-226 RA-228  
OTHER (Identify)

FOR LABORATORY USE ONLY

SCR96-8

RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha <u>1.5 ± 1.1</u>	<u>1.0</u>
Gross Beta <u>5.7 ± 1.0</u>	<u>1.0</u>
Radium 226 <u>                    </u>	<u>0.1</u>
Radium 228 <u>                    </u>	<u>1.0</u>
Other (Identify) <u>                    </u>	<u>                    </u>

8/15/96

VA  
LH

Procedure used: Measurement of Radioactivity in Drinking Water  
EPA-600/4-80-032

COMMENTS: \* MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, MO 63105  
(314) 854-6324



Results  
8/15/96

# SAMPLE ANALYSIS REQUEST

Date Received 08-06-96

ATTENTION:

St. Louis County Department of Health  
Environmental Health Laboratories

SAMPLE NUMBER

PWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED:

07-01 - 07-31-96

COLLECTED BY:

First Shift Operator

ADDRESS:

1635 South HWY 94

Defiance, MO

Zip Code 63341

TELEPHONE NO.:

( 314 ) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED:

Finished

☒

GROSS ALPHA

☒

GROSS BETA

☐ RA-226

☐ RA-228

☐ OTHER (Identify) \_\_\_\_\_

FOR LABORATORY USE ONLY

SCT96-8

## RESULTS (pCi/L)

\*MDL (pCi/L)

8/15/96

JH  
LA

Gross Alpha

< 1.0

1.0

Gross Beta

2.9 ± 1.0

1.0

Radium 226

0.1

Radium 228

1.0

Other

(Identify)

Procedure used:

Measurement of Radioactivity in Drinking Water  
EPA-600/4-80-032

COMMENTS: \* MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY:

ST. LOUIS COUNTY DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, MO 63105  
(314) 854-6324

# ST. CHARLES COUNTY MONTHLY WATER SALES REPORT

DATE OF REPORT 08/05/96

MONTH OF REPORT JULY

WATER PRODUCTION	435,677,000
WASHWATER USED	6,795,000
DELIVERED TO SYSTEM	428,882,000

## MO. AMERICAN WATER

	BOOSTER STATION	330,000,000
67004132835-007	FRANCIS HOWELL	33,000
67004132850-007	MO. HWYS & TRANS.	6,600
67004133000-004	M.K. FERGUSEN	829,000
67004133040-015	M.K. FERGUSEN	450,000
67004133010-002	M.K. FERGUSEN	62,500
67004133020-000	M.K. FERGUSEN	9,500
67004132855-002	FRANCIS HOWELL	347,000
67004132890-009	M.K. FERGUSEN	62,000
67095018237-000	M.K. FERGUSEN	165,000
	TOTAL	331,964,600

## WATER DISTRICT #2

24" EAST LINE	0
24" WEST LINE	78,289,000
BYPASS	0
TOTAL	78,289,000

## WATER DISTRICT #2

NEW MELLE	TOTAL	8,466,000
-----------	-------	-----------

## NATIONAL GUARD AREA

BLGD S-61	10,000
WASH RACK	4,000
TOTAL	14,000

TOTAL WATER SALES \*\*\*\*\* 418,733,600

# ST. CHARLES COUNTY WATER DEPARTMENT

## INVENTORY OF CHEMICALS

JULY 1996  
PREVIOUS BALANCE

LIME  
208054

CHLORIN  
7985

RECIEVED

INV. #	DATE	LIME
205774.	7/1	48280
205967.	7/2	49300
206544.	7/5	49720
206085.	7/8	49160
208504.	7/10	47660
155592.	7/11	48300
300457.	7/15	47940
300801.	7/17	49980
301014.	7/18	50180
301474.	7/22	49080
301767.	7/24	49600
301945.	7/25	50120
302425.	7/29	48940
302793.	7/31	48540

INV. #	DATE	CHLORIN
	7/8	8000
	7/15	8000
	7/24	8000

\*\*\*\*\* 686800  
TOTAL AMOUNT

\*\*\*\*\* 24000

USED 654243

31985

BALANCE 240611

8373

#/1000 GALLON 1.50

0.054

PARTS/MILLION 171

6.78

AVG. #/DAY 21105

762

# USED Y TO D 2988751.

121573.

**MONTHLY REPORT**

**SEPTEMBER 1996**

**BY**

**Stanley Remington**

**Consulting Hydrologist**

## I. CHEMICAL ANALYSES

On August 22, 1996 wells PW-5 and PW-6 were sampled. The results of the sampling show that neither well exceeded the NPDES limits. Both were within historical ranges. The parameters analyzed were gross alpha and beta, total uranium and nitroaromatics (shown as explosives). They are appended.

On August 26, 1996 a sample of the treated water from the raffinate pits at the chemical plant site at Weldon Spring was sent for analysis. The gross beta reading was slightly elevated, but well within historical ranges and NPDES limits. This batch of treated water was discharged into the Missouri River. They are appended.

On September 19, 1996 the quarterly sampling with the Department of Energy was carried out. I sampled wells PW-8 and RMW-2. The results of analyses have not yet been received. The quarterly sampling analyzes for more chemical parameters than do the monthly samples. They include several metals and nitrates.

## II. FUTURE PLANS

I will sample PW-7 during October. I will attend a one day meeting in St. Louis called the Tenth Annual St. Louis Regional Environmental Conference. This will be held at the Adam's Mark Hotel. There will be breakout sessions in the afternoon and I will attend the one for water.

### III. MISCELLANEOUS

Appended are the results on an analysis of the raw water at the St. Charles County Water Treatment Plant for the period of 8/1/96 through 8/31/96. Gross alpha and beta were checked and very low readings were obtained.

Also appended is the St. Charles County Monthly Water Sales report.

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

September 5, 1996

Stanley M. Remington  
956 Broadmoor Lane  
St. Charles, MO 63301

RE: ATAS #16644.01  
Weldon Spring

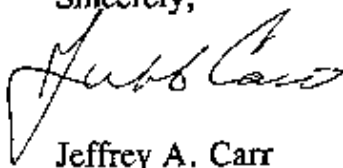
Dear Mr. Remington:

Enclosed is the analytical report for the sample received in our laboratory on August 26, 1996.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr  
Project Manager

Enclosures

JAC/dms

**ATAS**

"Professional Commitment"



CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1664401EX(260)

DATE : 09-05-96

SAMPLE MATRIX : WATER  
ATAS # : 16644.01  
DATE SUBMITTED: 08-26-96  
PROJECT : WELDON SPRING  
SAMPLE ID : NP-ES12-082696-C

PARAMETER	REPORTING LIMIT	UNITS	RESULTS	DATE ANALYZED	METHOD REFERENCE
INORGANICS					
NITRATE	1.05	mg/L	3.92	08-27-96	SM 418B
METALS					
ARSENIC	5.0	ug/L	ND	09-05-96	SW 6010
CHROMIUM	1.0	ug/L	ND	09-05-96	SW 6010
LEAD	3.0	ug/L	ND	09-05-96	SW 6010
MANGANESE	1.0	ug/L	1.9	09-05-96	SW 6010
SELENIUM	0.1	ug/L	ND	09-05-96	SW 6010
MERCURY	5.0	ug/L	ND	09-04-96	SW 7470

ug/L = PARTS PER BILLION (PPB)

mg/L = PARTS PER MILLION (PPM)

ND = NOT DETECTED ABOVE REPORTING LIMIT

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1664401EX(260)

DATE : 09-05-96

SAMPLE MATRIX : WATER  
ATAS # : 16644.01  
DATE SUBMITTED: 08-26-96  
DATE EXTRACTED: 08-29-96  
DATE ANALYZED : 08-30-96  
METHOD REF. : SW846-8090, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : NP-ES12-082696-C

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6 DNT	0.010	ND
2,4 DNT	0.020	ND

## QA/QC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	90 %
TETRACHLORO-M-XYLENE(30-150)	77 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1664401EX(260)

DATE : 09-05-96

SAMPLE MATRIX : WATER  
ATAS # : METHOD BLANK  
DATE SUBMITTED: 08-26-96  
DATE EXTRACTED: 08-29-96  
DATE ANALYZED : 08-30-96  
METHOD REF. : SW846-8090, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>REPORTING LIMIT</u>	<u>RESULTS</u>
2,6 DNT	0.010	ND
2,4 DNT	0.020	ND

## QA/OC SURROGATE RECOVERY

DECACHLOROBIPHENYL(30-150)	71 %
TETRACHLORO-M-XYLENE(30-150)	73 %

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

# ATAS

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1664401EX(260)

DATE : 09-05-96

SAMPLE MATRIX : WATER  
ATAS # : LABORATORY CONTROL SAMPLE  
DATE SUBMITTED: 08-26-96  
DATE EXTRACTED: 08-29-96  
DATE ANALYZED : 08-30-96  
METHOD REF. : SW846-8090, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : LABORATORY CONTROL SAMPLE

LCS  
% REC.

LCSD  
% REC.

RPD

2,6 DNT  
2,4 DNT

79  
75

36  
36

75  
70

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1664401EX(260)

DATE : 09-05-96

SAMPLE MATRIX : WATER  
ATAS EPISODE : #16644  
DATE SUBMITTED: 08-26-96  
PROJECT REF. : WELDON SPRING

RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
NP-ES12-082696-C	16644.01	GROSS ALPHA	8 +/- 6*
NP-ES12-082696-C	16644.01	GROSS BETA	22 +/- 11*
NP-ES12-082696-C	16644.01	TOTAL URANIUM (mg/L)	<0.005

\* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%  
CONFIDENCE LEVEL, 1.96σ.

pCi/L= PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)

**ENVIRONMENTAL SAMPLE CHAIN-OF-CUSTODY / AUTHORIZATION FORM**  
**WELDON SPRING SITE REMEDIAL ACTION PROJECT (WSSRAP)**  
 7295 HIGHWAY 94 SOUTH, ST. CHARLES, MO 63304  
 TELEPHONE (314) 441-8086 TELEX (314) 447-0803

Validation Documentation ☐

BSA114.1.1.1, Rev'd, Effective 11/97

WSSRAP Contact: _____		Lab/PO #: _____		Dept./Cost Code: _____			
Phone Number: _____		Requisitioner: <u>St. Charles</u>		Priority <input type="checkbox"/> Urgent <input checked="" type="checkbox"/> Emergency <input type="checkbox"/>			
Request Number: _____		Turnaround Time: <input type="checkbox"/> Standard <input type="checkbox"/> Expedited		Parameters <u>As, Cr, Hg, Mn, Se, Pb</u> <u>16644.01</u>			
#	Sample ID	QC	Date Sampled	Matrix	Cont.	Preserv.	Arch. (Y/N)
1	NP-ES12 - 082696 - C		8/26/96	Water	1-1 liter 1-1 liter glass	HNO3 Ice	N
					1-1 liter	H2SO4	
					1-4 liter	HNO3	

Sample's Signature: [Signature]      Checked By: [Signature]      Technical Reviewer: \_\_\_\_\_  
 Reason for Transfer: \_\_\_\_\_

Relinquished By	Received By	Date	Time	Reason for Transfer	Sent Intact? (Y/N)	Cooler Temp
<u>[Signature]</u>	<u>[Signature]</u>	8/26/96	1255			
<u>[Signature]</u>	<u>[Signature]</u>	8/26/96	1337	18°C		

**AUTHORIZATION**

# AMERICAN TECHNICAL & ANALYTICAL SERVICES, INC.

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

September 19, 1996

Stanley M. Remington  
956 Broadmoor Lane  
St. Charles, MO 63301

RE: ATAS #16613.01-#16613.02  
Weldon Spring

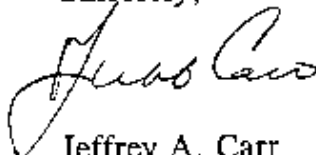
Dear Mr. Remington:

Enclosed are the analytical reports for the samples received in our laboratory on August 22, 1996.

If, in your review, you should have any questions or require additional information, please call.

Thank you for choosing ATAS for your analytical needs.

Sincerely,



Jeffrey A. Carr  
Project Manager

Enclosures

JAC/sdp

**ATAS**

"Professional Commitment"

CLIENT: STANLEY M. REMINGTON  
 919 BROADMOOR LANE  
 ST. CHARLES, MO 63301  
 ATTN: STANLEY M. REMINGTON

REPORT: 1661301RA(259)

DATE : 09-19-96

SAMPLE MATRIX : WATER  
 ATAS # : 16613.01  
 DATE SUBMITTED: 08-22-96  
 DATE ANALYZED : 08-29-96  
 METHOD REF. : SW846-8330, EPA METHODOLOGY .  
 PROJECT : WELDON SPRING  
 SAMPLE ID : PW-5

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT



CLIENT: STANLEY M. REMINGTON  
 919 BROADMOOR LANE  
 ST. CHARLES, MO 63301  
 ATTN: STANLEY M. REMINGTON

REPORT: 1661301RA(259)

DATE : 09-19-96

SAMPLE MATRIX : WATER  
 ATAS # : 16613.02  
 DATE SUBMITTED: 08-22-96  
 DATE ANALYZED : 08-29-96  
 METHOD REF. : SW846-8330, EPA METHODOLOGY  
 PROJECT : WELDON SPRING  
 SAMPLE ID : PW-6

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

CLIENT: STANLEY M. REMINGTON  
 919 BROADMOOR LANE  
 ST. CHARLES, MO 63301  
 ATTN: STANLEY M. REMINGTON

REPORT: 1661301RA(259)

DATE : 09-19-96

SAMPLE MATRIX : WATER  
 ATAS # : METHOD BLANK  
 DATE SUBMITTED: 08-22-96  
 DATE ANALYZED : 08-29-96  
 METHOD REF. : SW846-8330, EPA METHODOLOGY  
 PROJECT : WELDON SPRING  
 SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/L OR PARTS PER BILLION (PPB)

<u>EXPLOSIVE</u>	<u>QUANTITATION LIMIT</u>	<u>RESULTS</u>
HMX	13.0	ND
RDX	14.0	ND
1,3,5-TNB	7.3	ND
TETRYL	10.0	ND
1,3-DNB	4.0	ND
NITROBENZENE	7.0	ND
2,6 DNT	9.4	ND
2,4 DNT	5.7	ND
2,4,6 TNT	6.4	ND
o-NITROTOLUENE	12.0	ND
p-NITROTOLUENE	8.0	ND
m-NITROTOLUENE	7.9	ND

ND= NOT DETECTED ABOVE QUANTITATION LIMIT

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1661301RA(259)

DATE : 09-19-96

SAMPLE MATRIX : WATER  
ATAS # : LABORATORY CONTROL SAMPLE  
DATE SUBMITTED: 08-22-96  
DATE ANALYZED : 08-29-96  
METHOD REF. : SW846-8330, EPA METHODOLOGY  
PROJECT : WELDON SPRING  
SAMPLE ID : LABORATORY CONTROL SAMPLE

COMPOUND	PERCENT RECOVERY
----------	---------------------

HMX	96 %
RDX	124 %
1,3,5-TNB	105 %
ETRYL	70 %
1,3-DNB	105 %
TNT	105 %
NITROBENZENE	113 %
2,6 DNT	111 %
2,4 DNT	105 %
o-NITROTOLUENE	102 %
p-NITROTOLUENE	112 %
m-NITROTOLUENE	108 %

CLIENT: STANLEY M. REMINGTON  
919 BROADMOOR LANE  
ST. CHARLES, MO 63301  
ATTN: STANLEY M. REMINGTON

REPORT: 1661301RA(259)

DATE : 09-19-96

SAMPLE MATRIX : WATER  
ATAS EPISODE : #16613  
DATE SUBMITTED: 08-22-96  
PROJECT REF. : WELDON SPRING

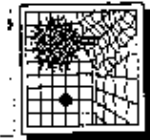
RESULTS REPORTED IN pCi/L

CLIENT ID	ATAS ID	RADIONUCLIDE	RESULT
PW-5	16613.01	GROSS ALPHA	5 +/- 4*
PW-6	16613.02	GROSS ALPHA	1 +/- 2*
PW-5	16613.01	GROSS BETA	8 +/- 6*
PW-6	16613.02	GROSS BETA	9 +/- 6*
PW-5	16613.01	TOTAL URANIUM (mg/L)	<0.005
PW-6	16613.02	TOTAL URANIUM (mg/L)	<0.005

\* VARIABILITY OF THE RADIOACTIVE DISINTERGRATION PROCESS (COUNTING ERROR) AT THE 95%  
CONFIDENCE LEVEL, 1.96σ.

pCi/L = PICOCURIES PER LITER

mg/L = PARTS PER MILLION (PPM)



### CHAIN OF CUSTODY RECORD

[illegible]

**SEND RESULTS TO (Name & Company) :**

Original to AT&amp;T Copy to Client



# SAMPLE ANALYSIS REQUEST

Results 9/20/96  
Date Received 9/6/96 y

ATTENTION: St. Louis County Department of Health  
Environmental Health Laboratories

SAMPLE NUMBER FWSD I.D. 6079507 - St. Charles County Water

DATE COLLECTED: 08-01-08-31-96

COLLECTED BY: First Shift Operator

ADDRESS: 1635 South HWY 94  
Defiance, MO Zip Code 63341

TELEPHONE NO.: (314) 926-9222 (Plant 447-0510) Thomas Aaron

ANALYSIS REQUESTED: RAW

X GROSS ALPHA X GROSS BETA RA-226 RA-228

OTHER (Identify) SCR96-9

## FOR LABORATORY USE ONLY

RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha 1.5 ± 1.1	1.0
Gross Beta 5.9 ± 1.1	1.0
Radium 226	0.1
Radium 228	1.0
Other (Identify)	

Procedure used: Measurement of Radioactivity in Drinking Water  
EPA-600/4-80-032

COMMENTS: \* MDL is the minimum detectable limit.

ANALYSIS PERFORMED BY: ST. LOUIS COUNTY DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, MO 63105  
(314) 854-6324



# SAMPLE ANALYSIS REQUEST

Results 9/20/96  
Date Received 9/6/96

## ATTENTION:

St. Louis County Department of Health  
Environmental Health Laboratories

## SAMPLE NUMBER

PWSD I.D. 6079507 - St. Charles County Water

## DATE COLLECTED:

08-01-08-31-96

## COLLECTED BY:

First Shift Operator

## ADDRESS:

1635 South HWY 94

Defiance, MO

Zip Code 63341

## TELEPHONE NO.:

(314) 926-9222 (Plant 447-0510) Thomas Aaron

## ANALYSIS REQUESTED:

FINISH

☒ GROSS ALPHA ☒ GROSS BETA ☐ RA-226 ☐ RA-228  
☐ OTHER (Identify)

SCT96-9

FOR LABORATORY USE ONLY

RESULTS (pCi/L)	*MDL (pCi/L)
Gross Alpha <u>&lt; 1.0</u>	<u>1.0</u>
Gross Beta <u>3.8 ± 0.9</u>	<u>1.0</u>
Radium 226 <u></u>	<u>0.1</u>
Radium 228 <u></u>	<u>1.0</u>
Other (Identify) <u></u>	<u></u>

Procedure used: Measurement of Radioactivity in Drinking Water  
EPA-600/4-80-032

COMMENTS: \* MDL is the minimum detectable limit.

## ANALYSIS PERFORMED BY:

ST. LOUIS COUNTY DEPARTMENT OF HEALTH  
ENVIRONMENTAL HEALTH LABORATORIES  
111 So. Meramec - 5th floor  
Clayton, MO 63105  
(314) 854-6324

## ST. CHARLES COUNTY MONTHLY WATER SALES REPORT

DATE OF REPORT 09/04/96

MONTH OF REPORT AUGUST

WATER PRODUCTION	483,307,000
WASHWATER USED	7,327,000
DELIVERED TO SYSTEM	475,980,000

## MO. AMERICAN WATER

	BOOSTER STATION	330,531,000
67004132835-007	FRANCIS HOWELL	34,000
67004132850-007	MO. HWYS & TRANS.	3,500
67004133000-004	M.K. FERGUSEN	829,500
67004133040-015	M.K. FERGUSEN	597,000
67004133010-002	M.K. FERGUSEN	90,500
67004133020-000	M.K. FERGUSEN	16,500
67004132855-002	FRANCIS HOWELL	296,000
67004132890-009	M.K. FERGUSEN	74,000
67095018237-000	M.K. FERGUSEN	57,000
	TOTAL	332,529,000

## WATER DISTRICT #2

24" EAST LINE	0
24" WEST LINE	82,406,000
BYPASS	0
TOTAL	82,406,000

## WATER DISTRICT #2

NEW MELLE	TOTAL	9,583,000
-----------	-------	-----------

## NATIONAL GUARD AREA

BLGD S-61	58,000
WASH RACK	0
TOTAL	58,000

TOTAL WATER SALES	*****	424,576,000
-------------------	-------	-------------



## ST. CHARLES COUNTY WATER DEPARTMENT

AUG 1996

PREVIOUS BALANCE

## INVENTORY OF CHEMICALS

LIME

240611

CHLORIN

8373

RECIEVED

INV. # DATE

LIME

DATE

CHLORIN

303039.8/1 49100  
 303799.8/6 49080  
 304140.8/8 49400  
 304939.8/14 49980  
 305209.8/15 48740  
 305945.8/20 49480  
 306318.8/22 49480  
 307085.8/27 48520  
 307514.8/29 48840  
 307743.8/30 49800

8/5 8000  
 8/16 8000  
 8/26 8000

\*\*\*\*\* 492420  
 TOTAL AMOUNT 733031

\*\*\*\*\* 24000  
 32373

USED 534734

26420

BALANCE 198297

7564

#/1000 GALLON 1.03

0.050

PARTS/MILLION 123

6.15

AVG. #/DAY 17249

852

# USED Y TO D 3523485.

147993.